



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,908	01/25/2006	Kimoon Kim	1751-0395	7450
6449 7590 08/15/2008 ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 WASHINGTON, DC 20005				
EXAMINER THERKORN, ERNEST G				
ART UNIT 1797		PAPER NUMBER		
NOTIFICATION DATE 08/15/2008		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

### Office Action Summary

**Application No.**

10/565,908

**Applicant(s)**

KIM ET AL.

**Examiner**

Ernest G. Therborn

**Art Unit**

1797

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 and 9-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 9-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/5508)
- Paper No(s)/Mail Date 6/23/08
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Inventor's Patent Application
- 6) ☐ Other: \_\_\_\_\_

Claims 1-5 and 9-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 and claim 10 have different definitions of R1 and R2. As such, this inconsistency renders the claims indefinite.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065). Richter (U.S. Patent Publication No. 2004/0147396) will serve as a translation of Richter (WO 02/096553) and Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) will be considered to be a single reference. At best, the claims differ from either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in the specificity of reciting the R1 and R2 groups. Kim (European Patent No. 1,094,065) (Abstract and page 9, line 7) discloses the recited R1 and R2 groups are suitable for packing materials of a chromatography column. It would have been obvious to use Kim (European Patent No. 1,094,065)'s R1 and R2 groups in either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) because Kim (European Patent No. 1,094,065)

(Abstract and page 9, line 7) discloses the recited R1 and R2 groups are suitable for packing materials of a chromatography column.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) as applied to claims 1-5 above, and further in view of Haase (U.S. Patent No. 5,276,062). At best, the claim differs from either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) in reciting the use of polymers that read on Amberlite XAD. Haase (U.S. Patent No. 5,276,062) (column 4, lines 10-20) discloses that the Amberlite XAD series are a most preferred class of polymer for adding affinity compounds. It would have been obvious to use XAD in either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) because Haase (U.S. Patent No. 5,276,062) (column 4, lines 10-20) discloses that the Amberlite XAD series are a most preferred class of polymer for adding affinity compounds.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) as applied to claims 1-5 above, and further in view of Snyder (Introduction to Modern Liquid Chromatography, John Wiley & Sons, Inc. New York, 1979, pages 177-

183). At best, the claim differs from either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) in reciting use of a particle size range of 5-300 microns. Snyder (Introduction to Modern Liquid Chromatography, John Wiley & Sons, Inc. New York, 1979, pages 177-183) discloses that particles in the size range of 5-200 microns are right for preliminary study, preparative separation, and routine analysis. It would have been obvious to use a particle size range of 5-200 microns in either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) because Snyder (Introduction to Modern Liquid Chromatography, John Wiley & Sons, Inc. New York, 1979, pages 177-183) discloses that particles in the size range of 5-200 microns are right for preliminary study, preparative separation, and routine analysis.

Claims 1-5 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) as applied to claims 1-5 above, and further in view of Duval (U.S. Patent No. 6,042,723). At best, the claims differ from either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) in reciting the product by process limitation of being formed from a reactive polymer. Claim 9 further recites copolymerization. Kim (European Patent No. 1,094,065) (page 8, lines 45-46)

discloses that cucurbitural may be used as a substitute for cyclodextrin. Duval (U.S. Patent No. 6,042,723) (column 4, lines 33-44) discloses that supports are surface modified with reactive groups to attach cyclodextrin and that use of ethylenic monomers when polymerizing cyclodextrin allows copolymerization of the cyclodextrins. It would have been obvious to form the product by the recited method in either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) because Kim (European Patent No. 1,094,065) (page 8, lines 45-46) discloses that cucurbitural may be used as a substitute for cyclodextrin and Duval (U.S. Patent No. 6,042,723) (column 4, lines 33-44) discloses that supports are surface modified with reactive groups to attach cyclodextrin. With regard to claim 9, it would have been obvious to copolymerize in either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) because Kim (European Patent No. 1,094,065) (page 8, lines 45-46) discloses that cucurbitural may be used as a substitute for cyclodextrin and Duval (U.S. Patent No. 6,042,723) (column 4, lines 33-44) discloses that use of ethylenic monomers when polymerizing cyclodextrin allows copolymerization of the cyclodextrins.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) and Duval (U.S. Patent No. 6,042,723) as applied to claims 1-5 and 9-

Art Unit: 1797

11above, and further in view of Haase (U.S. Patent No. 5,276,062). At best, the claim differs from either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) and Duval (U.S. Patent No. 6,042,723) in reciting the use of polymers that read on XAD. Haase (U.S. Patent No. 5,276,062) (column 4, lines 10-20) discloses that the Amberlite XAD series are a most preferred class of polymer for adding affinity compounds. It would have been obvious to use XAD in either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) and Duval (U.S. Patent No. 6,042,723) because Haase (U.S. Patent No. 5,276,062) (column 4, lines 10-20) discloses that the Amberlite XAD series are a most preferred class of polymer for adding affinity compounds.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) and Duval (U.S. Patent No. 6,042,723) as applied to claims 1-5 above, and further in view of Snyder (Introduction to Modern Liquid Chromatography, John Wiley & Sons, Inc. New York, 1979, pages 177-183). At best, the claim differs from either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) and Duval (U.S. Patent No. 6,042,723) in reciting use of a particle size range of 5-300 microns. Snyder (Introduction to Modern Liquid Chromatography, John Wiley

& Sons, Inc. New York, 1979, pages 177-183) discloses that particles in the size range of 5-200 microns are right for preliminary study, preparative separation, and routine analysis. It would have been obvious to use a particle size range of 5-200 microns in either Richter (WO 02/096553) in view of Richter (U.S. Patent Publication No. 2004/0147396) or Blanch (Australian Patent No. 2002302117) in view of Kim (European Patent No. 1,094,065) and Duval (U.S. Patent No. 6,042,723) because Snyder (Introduction to Modern Liquid Chromatography, John Wiley & Sons, Inc. New York, 1979, pages 177-183) discloses that particles in the size range of 5-200 microns are right for preliminary study, preparative separation, and routine analysis.

The remarks urge that claim 10 has been amended to correct the problem of having multiple definitions of R1 and R2. However, although R1 and R2 have been removed from formula 5, the second definition of R1 and R2 remain in the claim.

The remarks urge that Richter (U.S. Patent Publication No. 2004/0147396) is not directed to a polymeric resin. However, claim 1 is directed to a polymer. Richter (U.S. Patent Publication No. 2004/0147396) in paragraph 16 discloses the use of silica gel. Silica gel is a polymer of silicon dioxide. As such, claim 1 reads on Richter (U.S. Patent Publication No. 2004/0147396).

The remarks urge that Richter (U.S. Patent Publication No. 2004/0147396) does not chemically bond his cucurbituril. However, Richter (U.S. Patent Publication No. 2004/0147396) discloses chemical bonds in paragraph 28.

The remarks urge that R1 and R2 are not disclosed. However, Kim (European Patent No. 1,094,065) (Abstract and page 9, line 7) discloses the recited R1 and R2



groups are suitable for packing materials of a chromatography column. This is particularly true in view of the indefiniteness of the claims.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication should be directed to E. Therkorn at telephone number (571) 272-1149. The official fax number is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

Application/Control Number: 10/565,908

Page 9

Art Unit: 1797

Business Center (EBC) at 866-217-9197 (toll-free).

/Ernest G. Therkorn/  
**Ernest G. Therkorn**  
**Primary Examiner**  
**Art Unit 1797**

EGT  
August 11, 2008